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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,832	09/19/2000	Takahiro Yagishita	197396US2	4937
22850	7590	10/01/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MENBERU, BENIYAM	
		ART UNIT	PAPER NUMBER	
		2626	B	
DATE MAILED: 10/01/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/664,832	YAGISHITA ET AL.
	Examiner	Art Unit
	Beniyam Menberu	2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 September 2000.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-21 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 19 September 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5,6,8,9,10,11,12</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 18, line 24, the description of step S6 does not match the description in Figure 6 of step S6.

On page 28, lines 6-7, the description states "chrominance components of Cb and C4" when it should be "chrominance components of Cb and Cr".

Appropriate correction is required.

2. The abstract of the disclosure is objected to because the legal term "said" was used on lines 9, 12, and 16. Correction is required. See MPEP § 608.01(b).

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 6 shows the step "S7" which is not described in the specification. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5, 8, 9, 10,13,16 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6593935 to Imaizumi et al.

Regarding claims 1,16, and 19, Imaizumi et al discloses a device, method steps, and program (Imaizumi et al disclose processors that are programmed to instruct the operation of the device (column 3, lines 1-3; column 4,lines 32-35) for processing images, comprising:

a compressing/coding unit which encodes image data including a plurality of color components to produce fixed-length codes (Figure 1, reference 204; column 3, lines 61-64);

a memory unit which stores therein the codes produced by said compressing/coding unit (Figure 1, reference 205, 206; column 3, lines 33-36; column 4, lines 15-17);

a distribution-measurement unit which measures a distribution of the color components concurrently with the encoding of the image data performed by said compressing/coding unit (Imaizumi et al discloses a attribute discriminator and an encoder which receive the image signals from the background remover (Figure 1, reference 202) and process the signals in parallel. (Figure 1, reference 203; column 3, lines 30-33, lines 44-48));

a memory-control unit which releases a memory space assigned to part of the codes relating to colors in said memory unit if said distribution-measurement unit detects that the distribution concentrates on a particular color composition, and records data indicative of the particular color composition in said memory unit (Figure 3, reference 2037; column 8, lines 12-17; Imaizumi et al discloses an attribute memory which can reduce the attribute data to be stored when it detects that the image is monochrome thus releasing memory space (column 8, lines 39-46));

Regarding claim 2, Imaizumi et al discloses a compressing/coding unit which includes;

a color-conversion unit which converts an input image into the image data including the plurality of color components (Figure 1, reference 201; column 3, lines 4-8);

a compression unit which compresses the image data supplied from said color-conversion unit (Figure 1, reference 204) ;

a quantization unit which quantizes the compressed image data supplied from said compression unit (column 11, lines 15-22).

Regarding claim 5, Imaizumi et al discloses that the codes produced by said compressing/coding unit includes brightness information, structure information, and color information (Imaizumi et al disclose that the codes produced by the compression consist of Cr, Cb data which is related to color information (column 7, lines 3-9).The codes corresponding to average value and gradation level of Y (column 11, lines 15-20) can be used to determine brightness and structure information (column 7, lines 17-21,lines 23-25)).

Regarding claim 8, Imaizumi et al already discloses a compressing/coding unit, a memory unit, a distribution-measurement unit, and a memory-control unit as stated in claim 1. Further, Imaizumi et al disclose a scanner (Figure 1, reference 102) and a printer which prints data obtained after decoding the codes stored in said memory unit (Figure 1, reference 103;column 2, lines 67; column 3, lines 1-2; column 4, lines 7-9).

Regarding claim 9, Imaizumi et al teaches all the limitations of claim 8. Further Imaizumi et al disclose an image decoding unit which reads the codes and the data indicative of the particular color composition from said memory unit, and decodes the codes, followed by determining color components of the decoded image according to the data indicative of the particular color composition (Imaizumi et al disclose a secondary compression unit (Figure 1, reference 207) which relies on the attribute memory data for the expansion (decode) of secondarily compressed data (column 12, lines 5-10) (column 10, lines 42-44, 45-65.).

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Regarding claim 10, Imaizumi et al teaches all the limitations of claim 8.

Further, Imaizumi et al teaches a color-conversion unit, a compression unit, and a quantization unit as stated in claim 2.

Regarding claim 13, Imaizumi et al teaches all the limitations of claim 8.

Imaizumi et al further teach codes that include brightness information, structure information, and color information stated in claim 5.

Rega

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6593935 to Imaizumi et al in view of U.S. Patent No. 5740277 to Katto.

Regarding claim 3, Imaizumi et al teaches all the limitations of claim 2. However Imaizumi does not disclose a compression unit that carries out sub-band conversion to compress the image data supplied from said color-conversion unit.

Katto discloses a sub-band conversion to compress the image data supplied from said color-conversion unit (Katto discloses a sub-band encoder in Figure 6 that can be applied to the output of the color conversion).

Imaizumi et al and Katto are combinable because they are in the same problem area of image compression.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the sub-band encoder disclosed by Katto to the output of the color converter of Imaizumi et al to perform the image compression.

The motivation to combine the reference is clear because sub-band encoding taught by Katto can perform entropy encoding (column 11, lines 6-10).

Regarding claim 11, Imaizumi et al teach all the limitations of claim 10. Further Imaizumi et al in view of Katto disclose a compression unit that carries out sub-band conversion to compress image data as stated in claim 3.

8. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 6593935 to Imaizumi et al in view of U.S. Patent No. 6118552 to Suzuki et al.

Regarding claim 4, Imaizumi et al teach all the limitations of claim 2. However, Imaizumi et al does not teach a compression/coding unit further including a block-division unit which divides the input image into a plurality of blocks before the input image is supplied to said color-conversion unit.

Suzuki et al teach a block-division unit which divides the input image into a plurality of blocks (column 6, lines 33-39; Figure 1, reference 30).

Imaizumi et al and Suzuki et al are combinable because they are in the same problem area of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the block division unit of Suzuki et al before the color conversion performed by the system of Imaizumi et al.

The motivation to combine the reference is clear because it is advantageous to be able to process small blocks of image by dividing the input image into smaller blocks as taught by Suzuki et al.

Regarding claim 12, Imaizumi et al teach all the limitations of claim 10. Further Imaizumi et al in view of Suzuki et al disclose a block-division unit which divides the input image into a plurality of blocks before the input image is supplied to said color-conversion unit.

9. Claims 6, 7, 14,15, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6593935 to Imaizumi et al in view of U.S. Patent No. 5990876 to Shyu.

Regarding claims 6,17, and 20, Imaizumi et al teach all the limitations of claims 1,16, and 19 respectively. Further Imaizumi et al discloses a quantization unit, a method step, and program for quantizing the compressed image data supplied from said compression unit (column 11, lines 15-22). However Imaizumi et al does not disclose a compression unit, method step, and program for compressing the image data including the plurality of color components wherein the plurality of color components are R, G, and B components.

Shyu discloses a color converter, color conversion method and program (column 11, lines 58-63) for converting RGB to YCrCb which teaches that YCrCb components

depend on R, G, and B components. Thus when the converter of Shyu is applied to the system of Imaizumi et al, the YCrCb components inputted to the compression unit of Imaizumi et al (Figure 1, reference 204) will be of image data including the plurality of color components wherein the plurality of color components are R, G, and B components (column 5, lines 50-56).

Imaizumi et al and Shyu are combinable because they are in the same problem area of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the color converter of Shyu in the system of Imaizumi et al.

The motivation to combine the reference is clear because Shyu teaches that YCrCb color components are better for compression applications (column 1, lines 25-32).

Regarding claims 7,18 and 21, Imaizumi et al in view of Shyu teach all the limitations of claims 6,17, and 20 respectively. Further, Shyu teaches that the YCrCb components are a function of the difference (R-G) and (B-G) (column 5, lines 50-56). Thus if the converter unit , the conversion method and program of Shyu is applied to the system of Imaizumi et al, the distribution-measurement unit of Imaizumi et al (Figure 1, reference 203) which measures a distribution of the color components as stated in claim 1 will measure the distribution of the color components with respect to a (R-G) component and a (B-G) component.

Regarding claim 14, Imaizumi et al teach all the limitations of claim 8. Imaizumi et al in view of Shyu disclose a compression unit and a quantization unit as stated in claim 6.

Regarding claim 15, Imaizumi et al in view of Shyu teach all the limitations of claim 14. Further Shyu disclose distribution-measurement unit that measure the distribution of the color components with respect to a (R-G) component and a (B-G) component as stated in claim 7.

Other Prior Art Cited

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5383037 to Kimura et al. disclose an apparatus for encoding images.

U.S. Patent No. 6580523 to Yoshimoto et al disclose a printer for color images.

U.S. Patent No. 5987166 to Hayashi et al disclose an apparatus for color image processing.

U.S. Patent No. 5909505 to Katayama et al disclose an apparatus for encoding color images.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number (703) 306-3441. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

Patent Examiner

Beniyam Menberu

09/21/2004

KA Williams

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER